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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/739,883	12/18/2003	Mario M. Orrico	14451	9691

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EXAMINER

ELLIS, SUEZU Y

ART UNIT PAPER NUMBER

2878

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/739,883	ORRICO ET AL.	
	Examiner	Art Unit	
	Suezu Ellis	2878	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☒ Claim(s) 2,3,6,7,9,16-18 and 20-22 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on April 19, 2004, April 26, 2004 and April 29, 2005 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character not mentioned in the description: Item 2 of Fig. 1. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 15 and 20 recite the limitation of the optical member having a varying thickness which is unclear. Is the optical member's thickness the thickness of the material itself that is varying or the thickness of the optical path that is varying? Please clarify.

Claims not specifically addressed are indefinite due to their dependency on an indefinite claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 12 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyeta (US 4,250,380).

With respect to claim 1, 4, 12 and 15, Iyeta discloses in Fig. 15, a position sensor comprising two light sources (4a, 4b) and two light receptive elements (6a, 6b) where an optical member (light interceptor - 3) is positioned between the light sources and the light receptive elements. Iyeta discloses the light sources by be arranged outside of the light interceptor and the light receptive elements may be arranged on the or vice versa inside (col. 4, lines 42-46). Iyeta discloses the light receptive element generates and electric quantity proportional to the optical quantity received by the element and that output electric voltages are generated when there is any difference in the optical quantity (col. 3, lines 43-46, 59-63). Iyeta illustrates in Fig. 4a the light interceptor having a varying thickness (depth or height), thus the amount of light received by the light receptive elements depends on the thickness of the light interceptor, which inherently will affect the output voltage. Fig. 4A illustrates the optical member (light interceptor) having a thickness that gradually increases. Iyeta discloses the material of the light receptor being of poorly transmissive (light transparent) material. Though Iyeta fails to expressly disclose it being of semi-transparent material, it would have been an obvious design choice to a person of ordinary skill in the art to vary the amount of transparency of the material in order to determine the desired amount of light collected by the light receiving device.

Claims 5, 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iyeta in view of Tham (US 5,313,069).

With respect to claim 5, Iyeta address all the limitations of claim 1. Iyeta and Tham are directed to a similar field of endeavor of position sensors. Iyeta fails to expressly disclose the optical member moving linearly between the light emitting diode and the light receiving device. Tham discloses an optical member moving linearly between the light emitting diode and light receiving device (Fig. 3B). It would have been an obvious design choice to a person of ordinary skill in the art to modify the position sensor to be a linear since the technology of a rotary encoder and a linear encoder are functionally equivalent and interchangeable.

With respect to claims 10 and 11, the modified Iyeta discloses the optical member having a thickness that gradually increases (Fig. 2B of Tham; Fig.4A of Iyeta) or the optical member having a thickness that increases exponentially (Fig. 6A, 8A of Iyeta).

Claims 1, 4, 8, 12, 14, 15 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guzik et al. (US 6,015,970). Hereinafter, Guzik et al. will be referred to as Guzik.

With respect to claims 1, 4, 8, 12, 14, 15 and 19, Guzik discloses in Fig. 1, an optical switch assembly which ultimately controls the position of the on-off state of a radio, comprising a light source (12) and a pair of light detectors (14, 16) mounted on a printed circuit substrate where the substrate is fixed within a device housing (40) (col. 2,

lines 15-22). Guzik discloses the light source is an IR emitter and the light detectors are IR receivers or phototransistors. A semi-transparent optical member (translucent interposer) having two cylindrical walls, where the first wall (22) has a varying thickness (Fig. 5-9) and is positioned between the light source and the light detectors and modulates the amount of light collected by the first detector (col. 2, lines 32-41, 51-58; col. 3, lines 18-22). Guzik further discloses the second wall (24) of the optical member is rotated around the second light detector (col. 3, lines 3-5). Fig. 4 illustrates a cam feature (30) integrated into a top portion of the interposer (22) (col. 4, lines 14-16). Guzik discloses light detector (14) has a variable electric output which corresponds to the light intensity that falls upon it (col. 3, lines 33-35). Although Guzik does not expressly disclose the output being a voltage, it is well known that an electric output can be a current or a voltage which is interchangeable via the equation $V=IR$, and are related to the amount of intensity detected.

Allowable Subject Matter

Claims 20-22 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

With respect to claim 20, prior art, considered either alone or in combination, fails to disclose or reasonably suggest a semi-transparent optical gauge positioned between the light emitting diode and the feedback light receiving device, in addition with the other limitations of the claim.

Claims not specifically addressed would be allowable due to their dependency.

Claims 2, 3, 6, 7, 9 and 16-18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

With respect to claim 2 and 16, prior art, considered either alone or in combination, fails to disclose or reasonably suggest a semi-transparent optical gauge positioned between the light emitting diode and the feedback light receiving device, in addition with the other limitations of the claim.

Claims not specifically addressed would be allowable due to their dependency.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure

Yoshikawa et al. (US 4,712,000) discloses a feedback light receiving device (monitoring photosensor and drive circuit) used to control the light intensity of the light emitting device in a rotating encoder (col. 1, lines 40-47).

Telephone/Fax Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suez Ellis whose telephone number is 571-272-2868. The examiner can normally be reached on 8:30am-7pm (Monday-Thursday).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Porta can be reached on 571-272-2444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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